CUMULATIVE AUTHOR INDEX

Journal of Medical Entomology

Volume 24, 1987

Abbassy, M.M., 28, 35
Adams, W.V., 613
Akey, D.H., 106
Akin, D.E., 347
Alexander, J.B., 552, 587
Allan, S.A., 628
Andreadis, T.G., 315
Andre, R.G., 433
Archbold, E.F., 269
Arlian, L.G., 252
Ayala, F.J., 40
Azad, A.F., 689

Bailey, C.L., 11, 91, 431
Baker, E.E., 536
Ballinger, M.E., 61
Barber, J.T., 633
Barr, A.R., 623
Barreto, M., 115
Barreto, P., 115
Beaty, B.J., 61
Beck, A.J., 515
Beier, J.C., 28, 35, 536
Bernstein, I.L., 252
Berry, W.J., 286, 699
Beveridge, M., 295
Bloomer, S.E., 117, 370
Boisvert, J.L., 463
Bradley, T.J., 617
Burkot, T.R., 433
Buscher, G., 147
Butler, J.F., 347

Callcott, A.-M. A., 590
Campos, E.G., 457
Capiola, R.J., 633
Carson, K.A., 295
Chadee, D.D., 1
Chan, T.C., 542
Choe, J.C., 592
Christensen, B.M., 699
Christensen, H.A., 260
Clark, G.G., 91
Clarke, J.L. III, 286
Clifford, C.M., 666
Copeland, R.S., 485
Corbet, P.S., 1
Corredor, A., 587
Crabbs, C.L., 91
Craig, D.A., 275
Crystal, M.M., 584
Cupp, E.W., 694
Curtis, C.F., 273

D'Alessandro, A., 115
Daffner, J.F., 260
Darsie, R.F. Jr., 260
Davey, R.B., 118
DeFoliart, G.R., 282
Desch, C.E. Jr., 19
Desjeux, P., 40
Dietz, J.M., 198
Dobbelaere, D.A.E., 147
Dujardin, J.P., 40
de Saint Georges-Gridelet, D., 408

Eads, R.B., 467
El Shoura, S.M., 229, 235, 477, 532
Ellgaard, E.G., 633
Emerson, K.C., 279
Endris, R.G., 192, 243, 412

Fain, A., 248
Faran, M.E., 431
Feliciangeli, M.D., 141
Field, W.N., 512
Fiorentino, S., 547
Fitz-Earle, M., 448
Foil, L.D., 613
Frank, J.H., 155
Freier, J.E., 6
French, F.E., 590
Friedman, S., 6
Fujisaki, K., 702

Gallagher, J.S., 252
Garris, G.I., 82
Geden, C.J., 212
Geering, G., 192
George, J.E., 683
Georghiou, G.P., 24, 290, 494

Gettinger, D., 559
Goff, M.L., 198, 332, 696
Gouteux, J.-P., 268
Graves, P.M., 433
Guandalini, E., 547
Guillot, F.S., 416
Guptavanij, P., 623

Haile, D.G., 356, 523
Hall, D.W., 503
Haslett, T.M., 192
Hastriter, M.W., 383, 542
Hausler, W.J. Jr., 286
Hawley, W.K., 24
Hess, W.R., 192
Hitchen, J.M., 512
Hokama, Y., 319
Holtzer, T.O., 66
Homsher, P.J., 295
Horio, M., 376, 448
Howarth, J.A., 319
Hubbard, S.F., 1
Hussein, H.S., 77

Issel, C.J., 613

Jakob, W.L., 260
Jones, C.J., 54, 71
Jones, R.H., 61

Kamio, T., 702
Kanamitsu, K., 155
Kay, B.H., 425
Keirans, J.E., 117, 12
Kelly, D.J., 542
Kenawy, M.A., 28, 35
Kim, K.C., 592
Kimsey, R.B., 515, 517
Kitaoka, S., 702
Klein, J.-M., 425
Kline, D.L., 503
Knudsen, A.B., 290
Kokko, E.G., 324
Kreutzer, R.D., 587, 6

Lacoursiere, J.O., 463
Landry, S.V., 282
Lane, R.S., 319
Lawyer, P.G., 347, 458
Lewis, G.E. Jr., 542
Lewis, R.E., 399
Li, K.-S., 566
Lillie, T.H., 503
Linley, J.R., 99, 637
Lloyd, J.E., 71
Luna, L.L., 494

Magnarelli, L.A., 315
Maldonado, L., 40
Maroli, M., 547
Mather, T.N., 201
Maupin, G.O., 467
McDevitt, W.M., 420
McManus, J.M., 613
McWherter, G.R., 370
Meek, S.R., 536
Mellon, R.B., 24
Merritt, R.W., 275
Milne, D.E., 54
Mitchell, C.J., 260
Modi, G.B., 609
Monahan, M.J., 192
Monath, T.P., 260
Morales, A., 587, 651
Morii, T., 702
Mount, G.A., 356, 523
Mullens, B.A., 566
Muller, M.J., 206
Munstermann, L.E., 48
Murillo, J., 141
Mustafa, B.E., 77

Nayar, J.K., 617
Ntiamoa-Baidu, Y., 438, 444

Olin, T.E., 91

Paddock, C.D., 515, 517
Parkin, W.E., 420

Pasteur, N., 24, 494
Patterson, R.S., 54
Paulson, S.L., 485
Pawson, B.M., 66
Pegram, R.G., 666
Perkins, P.V., 243, 412
Petersen, J.J., 66
Phang, O.W., 542
Phillips, J.S., 628
Plesman, J., 201
Poirier, S.J., 303
Price, E.D., 279

Raymond, M., 24
Rachav, Y., 575
Reierson, D.A., 269
Ribeiro, J.M.C., 201
Riviere, F., 425
Robbins, R.G., 310
Romoser, W.S., 431
Rossi, C.A., 91
Rowley, W.A., 286, 699
Russell, C.L., 117
Rust, M.K., 269

Sabattini, M.S., 260
Said, S.E., 28, 35
Sakaguchi, K., 448
Saume, F., 290
Schlein, Y., 87
Schramm, B.A., 399
Schriefer, M.E., 295
Schulze, T.L., 420
Scoles, G., 694
Sechan, Y., 425
Shahid, M.A., 273
Shapiro, B.I., 147
Shipp, J.L., 324
Shisler, J.K., 420
Sonenshine, D.E., 295, 628
Spielman, A., 201
Stoffolano, J.G. Jr., 212
Stromberg, P.C., 416
Sutcliffe, J.F., 324
Swack, N.S., 286
Sweeny, T.L., 623

Takahashi, M., 595, 604
Tarrant, C.A., 694
Taylor, D., 628
Tesh, R.B., 587, 609
Thomas, D.B. Jr., 498
Tibayrenc, M., 40
Tran, H., 290
Traub, R., 689
Tsukamoto, M., 376, 448
Tullis, K., 332
Turell, M.J., 11
Turner, E.C. Jr., 340, 390

Vaughan, J.A., 340, 390
Veldman, W.T., 303
Venegas, H., 40
Vyszenski-Moher, D.L., 252

Walker, E.D., 303, 485
Walker, J.B., 666
Walters, L.L., 515, 517
Watts, D.M., 91
Weidman, C.S., 295
Wheeler, T.A., 696
Whitaker, J.O. Jr., 198, 248
Wirth, M., 290, 494
Wirth, M.C., 24
Wirtz, R.A., 433
Wirtz, R.A., 536
Wrenn, W.J., 221

Yasutomi, K., 595, 604
Yoshikawa, M., 46
Young, D.G., 243, 347, 412, 458, 587, 609, 651
Yunker, C.E., 696
Yuval, B., 87

Zeederberg, M.E., 575
Zeller, D.A., 575
Zimmerman, J.E., 28, 35
Zimmerman, R.H., 370

CUMULATIVE AUTHOR INDEX

Journal of Medical Entomology

Volume 24, 1987

Abbassy, M.M., 28, 35
Adams, W.V., 613
Akey, D.H., 106
Akin, D.E., 347
Alexander, J.B., 552, 587
Allan, S.A., 628
Andreadis, T.G., 315
Andre, R.G., 433
Archbold, E.F., 269
Arlian, L.G., 252
Ayala, F.J., 40
Azad, A.F., 689

Bailey, C.L., 11, 91, 431
Baker, E.E., 536
Ballinger, M.E., 61
Barber, J.T., 633
Barr, A.R., 623
Barreto, M., 115
Barreto, P., 115
Beaty, B.J., 61
Beck, A.J., 515
Beier, J.C., 28, 35, 536
Bernstein, I.L., 252
Berry, W.J., 286, 699
Beveridge, M., 295
Bloomer, S.E., 117, 370
Boisvert, J.L., 463
Bradley, T.J., 617
Burkot, T.R., 433
Buscher, G., 147
Butler, J.F., 347

Callcott, A.-M. A., 590
Campos, E.G., 457
Capiola, R.J., 633
Carson, K.A., 295
Chadee, D.D., 1
Chan, T.C., 542
Choe, J.C., 592
Christensen, B.M., 699
Christensen, H.A., 260
Clark, G.G., 91
Clarke, J.L. III, 286
Clifford, C.M., 666
Copeland, R.S., 485
Corbet, P.S., 1
Corredor, A., 587
Crabbs, C.L., 91
Craig, D.A., 275
Crystal, M.M., 584
Cupp, E.W., 694
Curtis, C.F., 273

D'Alessandro, A., 115
Daffner, J.F., 260
Darsie, R.F. Jr., 260
Davey, R.B., 118
DeFoliart, G.R., 282
Desch, C.E. Jr., 19
Desjeux, P., 40
Dietz, J.M., 198
Dobbelaere, D.A.E., 147
Dujardin, J.P., 40
de Saint Georges-Gridelet, D., 408

Eads, R.B., 467
El Shoura, S.M., 229, 235, 477, 532
Ellgaard, E.G., 633
Emerson, K.C., 279
Endris, R.G., 192, 243, 412

Fain, A., 248
Faran, M.E., 431
Feliciangeli, M.D., 141
Field, W.N., 512
Fiorentino, S., 547
Fitz-Earle, M., 448
Foil, L.D., 613
Frank, J.H., 155
Freier, J.E., 6
French, F.E., 590
Friedman, S., 6
Fujisaki, K., 702

Gallagher, J.S., 252
Garris, G.I., 82
Geden, C.J., 212
Geering, G., 192
George, J.E., 683
Georghiou, G.P., 24, 290, 494

Gettinger, D., 559
Goff, M.L., 198, 332, 696
Gouteux, J.-P., 268
Graves, P.M., 433
Guandalini, E., 547
Guillot, F.S., 416
Guptavanij, P., 623

Haile, D.G., 356, 523
Hall, D.W., 503
Haslett, T.M., 192
Hastriter, M.W., 383, 542
Hausler, W.J. Jr., 286
Hawley, W.K., 24
Hess, W.R., 192
Hitchen, J.M., 512
Hokama, Y., 319
Holtzer, T.O., 66
Homsher, P.J., 295
Horio, M., 376, 448
Howarth, J.A., 319
Hubbard, S.F., 1
Hussein, H.S., 77

Issel, C.J., 613

Jakob, W.L., 260
Jones, C.J., 54, 71
Jones, R.H., 61

Kamio, T., 702
Kanamitsu, K., 155
Kay, B.H., 425
Keirans, J.E., 117, 12
Kelly, D.J., 542
Kenawy, M.A., 28, 35
Kim, K.C., 592
Kimsey, R.B., 515, 517
Kitaoka, S., 702
Klein, J.-M., 425
Kline, D.L., 503
Knudsen, A.B., 290
Kokko, E.G., 324
Kreutzer, R.D., 587, 6

Lacoursiere, J.O., 463
Landry, S.V., 282
Lane, R.S., 319
Lawyer, P.G., 347, 458
Lewis, G.E. Jr., 542
Lewis, R.E., 399
Li, K.-S., 566
Lillie, T.H., 503
Linley, J.R., 99, 637
Lloyd, J.E., 71
Luna, L.L., 494

Magnarelli, L.A., 315
Maldonado, L., 40
Maroli, M., 547
Mather, T.N., 201
Maupin, G.O., 467
McDevitt, W.M., 420
McManus, J.M., 613
McWherter, G.R., 370
Meek, S.R., 536
Mellon, R.B., 24
Merritt, R.W., 275
Milne, D.E., 54
Mitchell, C.J., 260
Modi, G.B., 609
Monahan, M.J., 192
Monath, T.P., 260
Morales, A., 587, 651
Morii, T., 702
Mount, G.A., 356, 523
Mullens, B.A., 566
Muller, M.J., 206
Munstermann, L.E., 48
Murillo, J., 141
Mustafa, B.E., 77

Nayar, J.K., 617
Ntiamoa-Baidu, Y., 438, 444

Olin, T.E., 91

Paddock, C.D., 515, 517
Parkin, W.E., 420

Pasteur, N., 24, 494
Patterson, R.S., 54
Paulson, S.L., 485
Pawson, B.M., 66
Pegram, R.G., 666
Perkins, P.V., 243, 412
Petersen, J.J., 66
Phang, O.W., 542
Phillips, J.S., 628
Plesman, J., 201
Poirier, S.J., 303
Price, E.D., 279

Raymond, M., 24
Rachav, Y., 575
Reierson, D.A., 269
Ribeiro, J.M.C., 201
Riviere, F., 425
Robbins, R.G., 310
Romoser, W.S., 431
Rossi, C.A., 91
Rowley, W.A., 286, 699
Russell, C.L., 117
Rust, M.K., 269

Sabattini, M.S., 260
Said, S.E., 28, 35
Sakaguchi, K., 448
Saume, F., 290
Schlein, Y., 87
Schramm, B.A., 399
Schriefer, M.E., 295
Schulze, T.L., 420
Scoles, G., 694
Sechan, Y., 425
Shahid, M.A., 273
Shapiro, B.I., 147
Shipp, J.L., 324
Shisler, J.K., 420
Sonenshine, D.E., 295, 628
Spielman, A., 201
Stoffolano, J.G. Jr., 212
Stromberg, P.C., 416
Sutcliffe, J.F., 324
Swack, N.S., 286
Sweeny, T.L., 623

Takahashi, M., 595, 604
Tarrant, C.A., 694
Taylor, D., 628
Tesh, R.B., 587, 609
Thomas, D.B. Jr., 498
Tibayrenc, M., 40
Tran, H., 290
Traub, R., 689
Tsukamoto, M., 376, 448
Tullis, K., 332
Turell, M.J., 11
Turner, E.C. Jr., 340, 390

Vaughan, J.A., 340, 390
Veldman, W.T., 303
Venegas, H., 40
Vyszenski-Moher, D.L., 252

Walker, E.D., 303, 485
Walker, J.B., 666
Walters, L.L., 515, 517
Watts, D.M., 91
Weidman, C.S., 295
Wheeler, T.A., 696
Whitaker, J.O. Jr., 198, 248
Wirth, M., 290, 494
Wirth, M.C., 24
Wirtz, R.A., 433
Wirtz, R.A., 536
Wrenn, W.J., 221

Yasutomi, K., 595, 604
Yoshikawa, M., 46
Young, D.G., 243, 347, 412, 458, 587, 609, 651
Yunker, C.E., 696
Yuval, B., 87

Zeederberg, M.E., 575
Zeller, D.A., 575
Zimmerman, J.E., 28, 35
Zimmerman, R.H., 370

CUMULATIVE SUBJECT INDEX

Journal of Medical Entomology

Volume 24, 1987

Abnormal puff, *Culex pipiens*, 623
  meiotic drive, 623
Acanthophthirius nycticeius, Myobiidae, 248
  Nycticeius humeralis, 248
Aedes aegypti, biological control, 425
  Dirofilaria immitis, 699
  flight activity, 699
  linkage relationships, 512
  malathion resistance, 512
  organophosphates, 290
  Plasmodium gallinaceum, 6
  resistance, 290
  vector/parasite relations, 6
Aedes canadensis, *Aedes provocans*, 315
  Aedes stimulans, 315
  energy reserves, 315
  Mochlonyx cinctipes, 315
Aedes hendersoni, *Aedes triseriatus*, 485
  ecology, 485
Aedes polynesiensis, biological control, 425
Aedes provocans, *Aedes canadensis*, 315
  Aedes stimulans, 315
  energy reserves, 315
  Mochlonyx cinctipes, 315
Aedes stimulans, *Aedes canadensis*, 315
  Aedes provocans, 315
  energy reserves, 315
  Mochlonyx cinctipes, 315
Aedes triseriatus, *Aedes hendersoni*, 485
  Anopheles quadrimaculatus, 275
  Ascogregarina barretti, 303
  biological control, 303
  ecology, 485
  feeding, 275
  La Crosse encephalitis, 282
  oviposition, 282
  parity rates, 282
  phylogeny, 275
  population regulation, 303
  sampling, 282
Aedes trivittatus, flight activity, 286
  trivittatus virus, 286
African swine fever virus, *Ornithodoros coriaceus*, 192
  virus detection in hemolymph, 192
Allergenicity, antigenicity, 252
  Dermatophagoides pteronyssinus, 252
Amblyomma americanum, computer modeling, 356
  computer simulation, 523
  Dermacentor variabilis, 370
  dissemination, 370
  management strategies, 523
  Odocoileus virginianus, 523
  population dynamics, 356, 370
  small mammals, 370
Amblyomma calcaratum, migratory birds, 117
  new continental record, 117
Amblyomma variegatum, eradication, 82
  population dynamics, 82

Anopheles, immunosorbent assay, 536
  Plasmodium, 536
Anopheles punctulatus complex, assays, 433
  complex ELISA, 433
  complex Plasmodium, 433
Anopheles quadrimaculatus, *Aedes triseriatus*, 275
  feeding, 275
  phylogeny, 275
Antigenicity, allergenicity, 252
  Dermatophagoides pteronyssinus, 252
Argas cooleyi, *Ixodes baergi*, 683
  Coelaenus vicarius, 683
Argas (Persicargas) arboreus, Malpighian tubules, 477
  spermiogenesis, 532
Arthropod succession, *Carcinops pumilio*, 212
  carrion, 332
  poultry manure, 212
Artificial feeding, *Ornithodoros coriaceus*, 319
  Parafilm membrane, 319
Ascogregarina barretti, *Aedes triseriatus*, 303
  biological control, 303
  population regulation, 303
Assays, *Anopheles punctulatus* complex, 433
  ELISA, 433
  Plasmodium, 433
Attraction to plants, *Leishmania*, 87
  Phlebotomus papatasi, 87

Bacillus thuringiensis, biological control, 425
  biological control, 425
  Mesocyclops aspericornis, 425
Banding patterns, Culicidae, 376
  electrophoresis, 376
  malic enzyme, 376
Bibliography, Hoogstraal, 121
  ticks, 121
Biological control, *Aedes aegypti*, 425
  Aedes polynesiensis, 425
  Aedes triseriatus, 303
  Ascogregarina barretti, 303
  Bacillus thuringiensis, 425
  Blattella germanica, 269
  Cardiosoma carnifex, 425
  fungal pathogen, 269
  Mesocyclops aspericornis, 425
  Musca domestica, 66
  oviposition, 99
  oviposition behavior, 1
  parasitoid competition, 66
  population regulation, 303
  Toxorhynchites, 1, 99
Biology, *Phlebotomus perniciosus*, 547
Blattella germanica, biological control, 269
  fungal pathogen, 269
Bluetongue virus, *Culicoides brevitarsis*, 206
  Culicoides variipennis, 61
  vector/virus relations, 61
  virus transmission, 206
Boophilus microplus, cattle, 110
  larval attachment and age, 110
Borrelia burgdorferi, *Ixodes dammini*, 420
  insecticides, 420
  Lyme disease, 420
Brain cell karyotypes, Psychodidae, 609
Brennanacarus anneresauxi, Trombiculidae, 696
Brennanacarus, *Brennanacarus anneresauxi*, 696
  Musicola, 696
  Trombiculidae, 696
Brennanacarus anneresauxi, *Brennanacarus*, 696
  Musicola, 696

Cane rats, *Ixodes (Afrixodes) aulacodi*, 444
Carcinops pumilio, arthropod succession, 212
  poultry manure, 212
Cardiosoma carnifex, *Bacillus thuringiensis*, 425
  biological control, 425
  Mesocyclops aspericornis, 425
Carrion, Arthropod succession, 332
Cattle, *Boophilus microplus*, 110
  larval attachment and age, 110
  Psoroptes ovis, 416
Charadriiformes, lotus bird, 279
  Mallophaga, 279
  Rallicola, 279
Chemotaxis, mosquito larvae, 633
  nucleotides, 633
Cheyletus malaccensis, human parasites, 46
  tatami mats, 46
Cochliomyia hominivorax, myiasis, 498
Collection technique, ectoparasites, 592
  Phalacrocorax pelagicus, 592
Computer modeling, *Amblyomma americanum*, 356
  population dynamics, 356
Conjunctivitis, dermatitis, 155
  Paederus, 155
  Staphylinidae, 155
  toxin, pederin, 155
Control, *Ornithonyssus sylviarum*, 584
Crimean-Congo hemorrhagic fever, ecology, 575
  Ixodoidea, 575
Culex (Culex) pipiens, dissemination, 431
  Rift Valley fever virus, 431
Culex pipiens, abnormal puff, 623
  meiotic drive, 623
Culex pipiens complex, cytoplasmic incompatibility, 273
  genetic control, 273
Culex quinquefasciatus, insecticidal resistance, 24
  organophosphates, 24
Culex tarsalis, insecticide resistance, 494
Culex tritaeniorhynchus, insecticides, 604
  organophosphorus, 595
  resistance, 595, 604
Culicidae, banding patterns, 376
  Dirofilaria infection, 617
  diuresis, 617
  eastern equine encephalitis virus, 91
  electrophoresis, 376
  hematology, 71
  host-feeding patterns, 28, 35, 260
  hypersensitivity, 71
  malic enzyme, 376
  oviposition flight, 637
  precipitin technique, 28, 35
  Rift Valley fever virus, 11
  Toxorhynchites, 637
  vector capacity, 11
  vertical transmission, 91
  western equine encephalitis, 260
Culicoides arakawae, *Leucocytozoon caulleryi*, 702
Culicoides brevitarsis, bluetongue virus, 206
  virus transmission, 206
Culicoides spp., periodicity, diel/lunar, 503
  seasonal occurrence, 503
Culicoides variipennis, bluetongue virus, 61
  development, 390
  distribution, 340
  nulliparous/parous categorization, 106

copepesis, 106
population dynamics, 566
time series analysis, 566
vector/virus relations, 61
Cytoplasmic incompatibility, *Culex pipiens* complex, 273
genetic control, 273

Demodex nanus, follicle mite, 19
Rattus spp., 19
Dermacentor andersoni, *Dermacentor variabilis*, 628
pheromones, 628
Dermacentor variabilis, *Amblyomma americanum*, 370
Dermacentor andersoni, 628
dissemination, 370
ecdysteroid production, 295
pheromones, 628
population dynamics, 370
small mammals, 370
Dermatitis, conjunctivitis, 155
Psoderus, 155
Staphylinidae, 155
toxin, 155
Dermatobia hominis, myiasis, 498
Dermatophagoides pteronyssinus, allergenicity, 252
antigenicity, 252
fungus association, 408
vitamin requirements, 408
Development, *Culicoides variipennis*, 390
Leishmania mexicana, 347
Lutzomyia diabolica, 347
Lutzomyia shannoni, 347
Rhipicephalus simpsoni, 438
Dirofilaria immitis, *Aedes aegypti*, 699
flight activity, 699
Dirofilaria infection, Culicidae, 617
diuresis, 617
Disease transmission, fleas, 689
rickettsiae, 689
Dispersal, Psychodidae, 552
Dissemination, *Amblyomma americanum*, 370
Culex (Culex) pipiens, 431
Dermacentor variabilis, 370
population dynamics, 370
Rift Valley fever virus, 431
small mammals, 370
Distribution, *Culicoides variipennis*, 340
Diuresis, Culicidae, 617
Dirofilaria infection, 617
Drosophila, sex ratio, 448
spiroplasmas, 448
Toxorhynchites splendens, 448

East Coast fever, immunity, 147
Rhipicephalus appendiculatus, 147
Eastern equine encephalitis virus, *Culicidae*, 91
vertical transmission, 91
Ecdysteroid production, *Dermacentor variabilis*, 295
Ecology, *Aedes hendersoni*, 485
Aedes triseriatus, 485
Crimean-Congo hemorrhagic fever, 575
Ixodoidea, 575
Ectoparasites, collection technique, 592
Phalacrocorax pelagicus, 592
Egg ultrastructure, *Lutzomyia*, 412
Ehrlichia sennetsu, *Leptotrombidium fletcheri*, 542
Rickettsia tsutsugamushi, 542
vector studies, 542
ELISA, *Anopheles punctulatus* complex, 433
assays, 433
Plasmodium, 433
Electrophoresis, banding patterns, 376
Culicidae, 376
malic enzyme, 376
Energy reserves, *Aedes canadensis*, 315
Aedes provocans, 315
Aedes stimulans, 315
Mochlonyx cinctipes, 315
Enlarged salivary glands, *Glossina*, 268
trypanosomiasis, 268
Environmental effects, *Ixodes (Afrixodes) aulacodi*, 444
Rhipicephalus simpsoni, 438
Eradication, *Amblyomma variegatum*, 82
population dynamics, 82
Euschoengastia of North America, generic revision, 221
Trombiculidae, 221
Experimental transmission, *Leishmania*, 243
Lutzomyia anthophora, 243

Feeding, *Aedes triseriatus*, 275
Anopheles quadrimaculatus, 275
phylogeny, 275
Fleas, disease transmission, 689
rickettsiae, 689
Flight activity, *Aedes aegypti*, 699
Aedes trivittatus, 286
Dirofilaria immitis, 699
trivittatus virus, 286
Follicle mite, *Demodex nanus*, 19
Rattus spp., 19
Fungal pathogen, *Blattella germanica*, 269
biological control, 269
Fungus association, *Dermatophagoides pteronyssinus*, 408
vitamin requirements, 408

Generic redefinition, *Speleocola*, 198
Trombiculidae, 198
Generic revision, *Euschoengastia* of North America, 221
Trombiculidae, 221
Genetic control, *Culex pipiens* complex, 273
cytoplasmic incompatibility, 273
Genitalia, *Leptotrombidium fletcheri*, 383
morphology, 383
scanning electron microscopy, 383

Gigantolaelaps, host specificity, 559
Hectomys, 559
Oryzomys, 559
Glossina, enlarged salivary glands, 268
trypanosomiasis, 268

Hematology, *Culicidae*, 71
hypersensitivity, 71
Hoogstraal, bibliography, 121
ticks, 121
Horse flies, mechanical transmission, 613
mouthparts, 613
Host specificity, *Gigantolaelaps*, 559
Hectomys, 559
Oryzomys, 559
Host-feeding patterns, Culicidae, 260
Culicidae, 28, 35
precipitin technique, 28, 35
western equine encephalitis, 260
Human parasites, *Cheyletus malaccensis*, 46
tatami mats, 46
Hypersensitivity, *Culicidae*, 71
hematology, 71

Immunity, East Coast fever, 147
Rhipicephalus appendiculatus, 147
Immunosorbent assay, *Anopheles*, 536
Plasmodium, 536
Insecticidal resistance, *Culex quinquefasciatus*, 24
organophosphates, 24
Culex tarsalis, 494
Insecticides, *Borrelia burgdorferi*, 420
Culex tritaeniorhynchus, 604
Ixodes dammini, 420
Lyme disease, 420
resistance, 604
Isozyme analysis, *Leishmania braziliensis*, 587
Lutzomyia, 587
Triatoma infestans, 40
Trypanosoma cruzi, 40
Isozyme comparisons, populations of stable fly, 54
Stomoxys calcitrans, 54
Ixodes (Afrixodes) aulacodi, cane rats, 444
environmental effects, 444
life cycles, 444
Ixodes baergi, *Argas cooleyi*, 683
Ceciacus vicarius, 683
Ixodes dammini, *Borrelia burgdorferi*, 420
insecticides, 420
Lyme disease, 420
Lyme disease spirochete, 201
spirochete transmission, 201
Ixodes woodi, description of immatures, 310
Ixodidae, life cycles, 77
physical parameters, 77
Crimean-Congo hemorrhagic fever, 575
ecology, 575

La Crosse encephalitis, *Aedes triseriatus*, 282
oviposition, 282
parity rates, 282
sampling, 282
Larval attachment and age, *Boophilus microplus*, 118
cattle, 118
Leishmania, attraction to plants, 87
experimental transmission, 243
Lutzomyia anthophora, 243
, 87
Leishmania braziliensis, isozyme analysis, 587
Lutzomyia, 587
Leishmania mexicana, development, 347
Lutzomyia diabolica, 347
Lutzomyia diabolica, 458
Lutzomyia shannoni, 347, 458
transmission, 458
Leishmaniasis, *Lutzomyia verrucarum* spp., 141
Lutzomyia youngi, 141
Leptotrombidium fletcheri, *Ehrlichia sennetsu*, 542
genitalia, 383
morphology, 383
Rickettsia tsutsugamushi, 542
scanning electron microscopy, 383
vector studies, 542
Leucocytozoon caullery, *Culicoides arakawae*, 702
Life cycles, Ixodidae, 77
Ixodes (Afrixodes) aulacodi, 444
Ornithodoros erraticus, 229
physical parameters, 77
relapsing fever, 229
Linkage relationships, *Aedes aegypti*, 512
malathion resistance, 512
Lotus bird, Charadriiformes, 279
Mallophaga, 279
Rallicola, 279
Lutzomyia, egg ultrastructure, 412
isozyme analysis, 587
Leishmania braziliensis, 587
Lutzomyia anthophora, experimental transmission, 243
Leishmania, 243
Lutzomyia diabolica, development, 347
Leishmania mexicana, 347, 458
Lutzomyia shannoni, 347, 458
transmission, 458
Lutzomyia shannoni, development, 347
Leishmania mexicana, 347, 458
Lutzomyia diabolica, 347, 458
transmission, 458
Lutzomyia verrucarum spp., *Lutzomyia youngi*, 141
leishmaniasis, 141
Lutzomyia youngi, *Lutzomyia verrucarum* spp., 141
leishmaniasis, 141
Lyme disease, *Borrelia burgdorferi*, 420
insecticides, 420
Ixodes dammini, 420

Lyme disease spirochete, *Ixodes dammini*, 201
  spirochete transmission, 201

Maintenance, rearing, 463
  Simuliidae, 463
Malathion resistance, *Aedes aegypti*, 512
  linkage relationships, 512
Malic enzyme, banding patterns, 376
  Culicidae, 376
  electrophoresis, 376
Mallophaga, Charadriiformes, 279
  lotus bird, 279
  Ballicola, 279
Malpighian tubules, *Argas (Persicargas) arboreus*, 477
  ultrastructure, 477
Mechanical transmission, horse flies, 613
  mouthparts, 613
Meiotic drive, abnormal puff, 623
  Culex pipiens, 623
Meringis, Siphonaptera, 467
  taxonomy, 467
Mesocyclops aspericornis, biological control, 425
Migratory birds, *Amblyomma calcaratum*, 117
  new continental record, 117
Mochlonyx cinctipes, *Aedes canadensis*, 315
  Aedes provocans, 315
  Aedes stimulans, 315
  energy reserves, 315
Morphology, genitalia, 383
  Leptotrombidium fletcheri, 383
  Ornithodoros erraticus, 235
  reproductive organs of male, 235
  scanning electron microscopy, 383
Mosquito larvae, chemotaxis, 633
  nucleotides, 633
Mouthparts, horse flies, 613
  mechanical transmission, 613
Musca domestica, biological control, 66
  parasitoid competition, 66
Myiasis, *Cochliomyia hominivorax*, 498
  Dermatobia hominis, 498
Myobiidae, *Acanthophthirius nycticebus*, 248
  Nycticebus humeralis, 248

Nanicola, *Brennanacarus annereauxi*, 696
  Brennanacarus, 696
  Trombiculidae, 696
Nectomys, *Gigantolaelaps*, 559
  host specificity, 559
  Oryzomys, 559
New continental record, *Amblyomma calcaratum*, 117
  migratory birds, 117
New species, new synonymy, 651
  Psychodidae, 651
New synonymy, new species, 651
  Psychodidae, 651
  taxonomy, 651
Nucleotides, chemotaxis, 633
  mosquito larvae, 633
Nulliparous/parous categorization, *Culicoides variipennis*, 106
  oogenesis, 106
Nycticebus humeralis, *Acanthophthirius nycticebus*, 248
  Myobiidae, 248

Odocoileus virginianus, *Amblyomma americanum*, 523
  computer simulation, 523
  management strategies, 523
Oeciacus vicarius, *Argas cooleyi*, 683
  Ixodes baeryi, 683
Oogenesis, *Culicoides variipennis*, 106
  nulliparous/parous categorization, 106
Organophosphates, *Aedes aegypti*, 290
  Culex quinquefasciatus, 24
  insecticidal resistance, 24
  resistance, 290
Organophosphorus, *Culex tritaeniorhynchus*, 595
  resistance, 595
Ornithodoros coriaceus, African swine fever virus, 192
  artificial feeding, 319
  Parafilm membrane, 319
  virus detection in hemolymph, 192
Ornithodoros erraticus, life cycle, 229
  morphology, 235
  relapsing fever, 229
  reproductive organs of male, 235
Ornithonyssus sylviarum, control, 584
Oryzomys, *Gigantolaelaps*, 559
  host specificity, 559
  Nectomys, 559
Oviposition, *Aedes triseriatus*, 282
  biological control, 99
  La Crosse encephalitis, 282
  parity rates, 282
  rearing, 694
  sampling, 282
  Simulium vittatum, 694
  techniques, 694
  Toxorhynchites, 99
Oviposition behavior, biological control, 1
  Toxorhynchites, 1
Oviposition flight, Culicidae, 637
  Toxorhynchites, 637

Paederus, conjunctivitis, 155
  dermatitis, 155
  Staphylinidae, 155
  toxin, 155
Palpal bulb sensilla, *Simulium arcticum*, 324
  ultrastructure, 324
Parafilm membrane, artificial feeding, 319
  Ornithodoros coriaceus, 319
Parasitoid competition, biological control, 66
  Musca domestica, 66

Parity rates, *Aedes triseriatus*, 282
  La Crosse encephalitis, 282
  oviposition, 282
  sampling, 282
Periodicity, diel/lunar *Culicoides* spp., 503
Phalacrocorax pelagicus, collection technique, 592
  ectoparasites, 592
Pheromones, *Dermacentor andersoni*, 628
  Dermacentor variabilis, 628
Phlebotomus papatasi, attraction to plants, 87
  Leishmania, 87
Phlebotomus perniciosus, biology, 547
Phylogeny, *Aedes triseriatus*, 275
  Anopheles quadrimaculatus, 275
  feeding, 275
Physical parameters, *Ixodidae*, 77
  life cycles, 77
Plasmodium, *Anopheles punctulatus complex*, 433
  Anopheles, 536
  assays, 433
  EIA, 433
  immunosorbent assay, 536
Plasmodium gallinaceum, *Aedes aegypti*, 6
  vector/parasite relations, 6
Plocopsylla, systematics, 399
Population dynamics, *Amblyomma americanum*, 356
  Amblyomma americanum, 370
  Amblyomma variegatum, 82
  Culicoides variipennis, 566
  computer modeling, 356
  Dermacentor variabilis, 370
  dissemination, 370
  eradication, 82
  small mammals, 370
  time series analysis, 566
Population regulation, *Aedes triseriatus*, 303
  Ascogregarina barretti, 303
  biological control, 303
Populations of stable fly, isozyme comparisons, 54
  Stomoxys calcitrans, 54
Poultry manure, arthropod succession, 212
  Carcinops pumilio, 212
Precipitin technique, *Culicidae*, 28, 35
  host-feeding patterns, 28, 35
Predation, *Rhodnius prolixus*, 115
  Theridion rufipes, 115
Psoroptes ovis, cattle, 416
  reproduction, 416
  vacuum sampling, 590
Psychodidae, brain cell karyotypes, 609
  dispersal, 552
  new species, 651
  new synonymy, 651
Psychodidae, taxonomy, 651

Ballicola, Charadriiformes, 279
  lotus bird, 279
  Mallophaga, 279
Rattus spp., *Demodex manus*, 19
  follicle mite, 19
Rearing, maintenance, 463
  oviposition, 694
  Simuliidae, 463
  Simulium vittatum, 694
  techniques, 694
Relapsing fever, life cycle, 229
  Ornithodoros erraticus, 229
Reproduction, *Psoroptes ovis*, 416
Reproductive organs of male, morphology, 235
  Ornithodoros erraticus, 235
Resistance, *Aedes aegypti*, 290
  Culex tritaeniorhynchus, 595, 604
  insecticides, 604
  organophosphates, 290
  organophosphorus, 595
Rhipicephalus appendiculatus, East Coast fever, 147
  immunity, 147
Rhipicephalus muhsamae, *Rhipicephalus praetextatus*, 666
  Rhipicephalus simus, 666
Rhipicephalus praetextatus, *Rhipicephalus muhsamae*, 666
  Rhipicephalus simus, 666
Rhipicephalus simpsoni, development, 438
  environmental effects, 438
Rhipicephalus simus, *Rhipicephalus muhsamae*, 666
  Rhipicephalus praetextatus, 666
Rhodnius prolixus, predation, 115
  Theridion rufipes, 115
Rickettsia tsutsugamushi, *Ehrlichia sennetsu*, 542
  Leptotrombidium fletcheri, 542
  vector studies, 542
Rickettsiae, disease transmission, 689
  fleas, 689
Rift Valley fever virus, *Culex (Culex) pipiens*, 431
  Culicidae, 11
  dissemination, 431
  virus vector capacity, 11

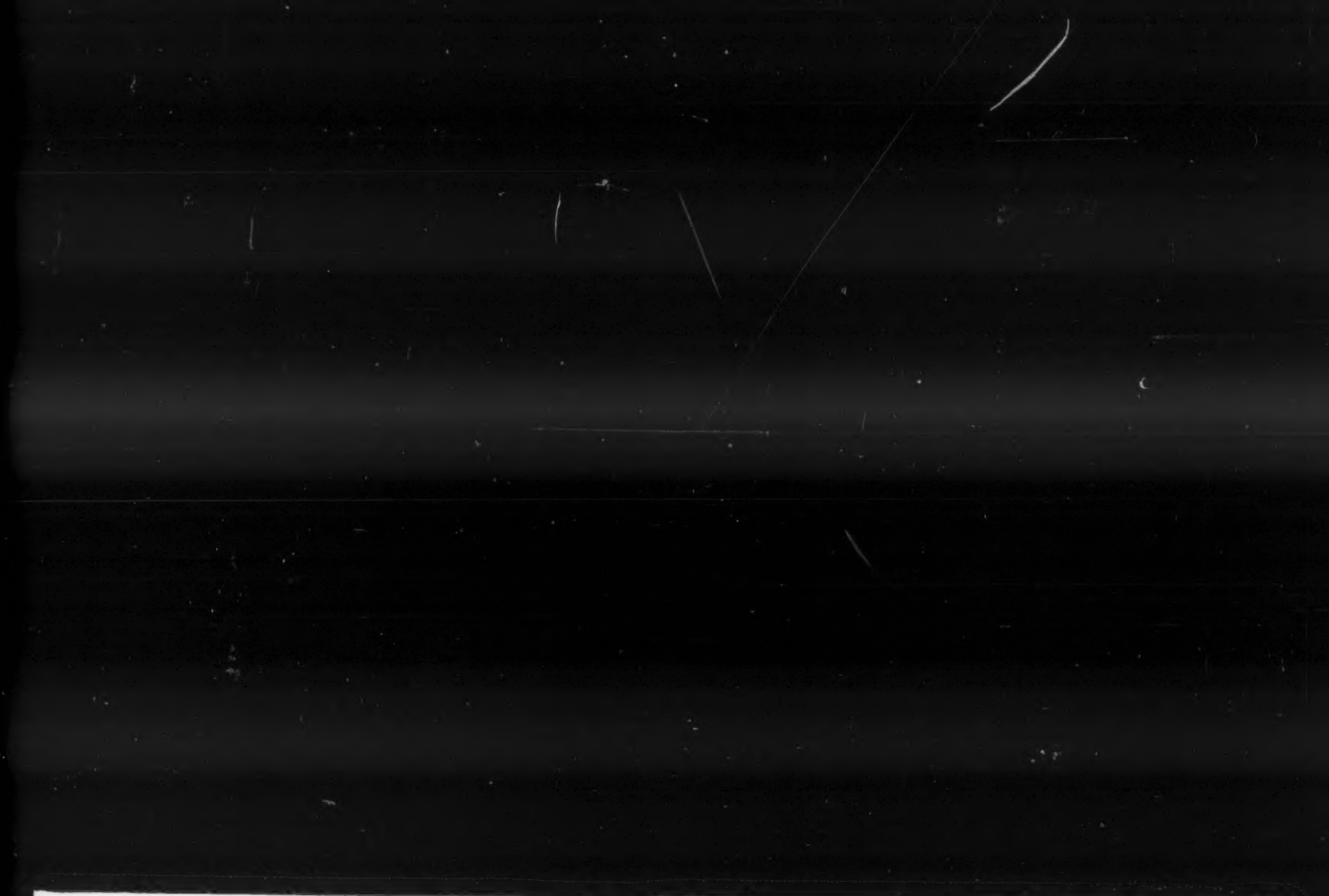
Sampling, *Aedes triseriatus*, 282
  La Crosse encephalitis, 282
  oviposition, 282
  parity rates, 282
Scanning electron microscopy, genitalia, 383
  Leptotrombidium fletcheri, 383
  morphology, 383
Seasonal occurrence, *Culicoides* spp., 503
Sex ratio, *Drosophila*, 448
  spiroplasmas, 448
  Toxorhynchites splendens, 448
Simuliidae, maintenance, 463
  rearing, 463
Simulium arcticum, palpal bulb sensilla, 324
  ultrastructure, 324
Simulium vittatum, oviposition, 694
  rearing, 694
  techniques, 694

Siphonaptera, *Meringis*, 467
Small mammals, *Amblyomma americanum*, 370
Dermacentor variabilis, 370
dissemination, 370
population dynamics, 370
Speleocola, generic redefinition, 198
Trombiculidae, 198
Spermiogenesis, *Argas (Persicargas) arboreus*, 532
Spirochete transmission, *Ixodes dammini*, 201
Lyme disease spirochete, 201
Spiroplasmas, *Drosophila*, 448
sex ratio, 448
Tuvorhynchites splendens, 448
Staphylinidae, conjunctivitis, 155
dermatitis, 155
Paederus, 155
toxin, 155
Stomoxys calcitrans, isozyme comparisons, 54
populations of stable fly, 54
Systematics, *Plocopsylla*, 399

Tatami mats, *Cheyletus malaccensis*, 46
human parasites, 46
Taxonomy, *Meringis*, 467
new species, 651
new synonymy, 651
Psychodidae, 651
Techniques, oviposition, 694
rearing, 694
Simulium vittatum, 694
Theridion rufipes, predation, 115
Rhodnius prolixus, 115
Ticks, bibliography, 121
Hoogstraal, 121
Time series analysis, *Culicoides variipennis*, 566
population dynamics, 566
Toxin, conjunctivitis, 155
dermatitis, 155
Paederus, 155
Staphylinidae, 155
Tuvorhynchites, biological control, 1
biological control, 99
Culicidae, 637
oviposition behavior, 1
ovipositon, 99
oviposition flight, 637
Tuvorhynchites splendens, *Drosophila*, 448
sex ratio, 448
spiroplasmas, 448

Transmission, *Leishmania mexicana*, 458
Lutzomyia diabolica, 458
Lutzomyia shannoni, 458
Triatoma infestans, isozyme analysis, 40
Trypanosoma cruzi, 40
Trivittatus virus, *Aedes trivittatus*, 286
flight activity, 286
Trombiculidae, *Brennanacarus anneresuxi*, 696
Brennanacarus, 696
Euschoengastia of North America, 221
generic redefinition, 198
generic revision, 221
Musicola, 696
Speleocola, 198
Trypanosoma cruzi, isozyme analysis, 40
Triatoma infestans, 40
Trypanosomiasis, enlarged salivary glands, 268
Glossina, 268

Ultrastructure, Malpighian tubules, 477
palpal bulb sensilla, 324
Simulium arcticum, 324

Vacuum sampling, *Psoroptes ovis*, 590
Vector capacity, Culicidae, 11
Rift Valley fever virus, 11
Vector studies, *Ehrlichia sennetsu*, 542
Leptotrombidium fletcheri, 542
Rickettsia tsutsugamushi, 542
Vector/parasite relations, *Aedes aegypti*, 6
Plasmodium gallinaceum, 6
Vector/virus relations, bluetongue virus, 61
Culicoides variipennis, 61
Vertical transmission, *Culicidae*, 91
eastern equine encephalitis virus, 91
Virus detection in hemolymph, African swine fever virus, 192
Ornithodoros coriaceus, 192
Virus transmission, bluetongue virus, 206
Culicoides brevitarsis, 206
Vitamin requirements, *Dermatophagoides pteronyssinus*, 408
fungus association, 408

Western equine encephalitis, Culicidae, 260
host-feeding patterns, 260